THE MINERAL INDUSTRY OF ARGENTINA

By Ivette E. Torres

Argentina's economy continued to recover from the economic recession that affected the country during 1998 and 2002. The positive trend of the gross domestic product (GDP) that began at the end of 2002 continued. After an increase of 8.8% in 2003, the real GDP increased by 9% in 2004. With the growth in GDP for 2003 and 2004, Argentina's real GDP reached prerecession levels. The nominal GDP was $151.9 billion ($484.2 billion and about $12,500 per capita based on purchasing power parity). The country's foreign debt, however, continued to increase and reached $170.8 billion at the end of 2004. After defaulting on its debt in 2002, new efforts to renegotiate the debt began in 2004, and formal negotiations began in January 2005 (Instituto Nacional de Estadística y Censos, 2005§[1]; International Monetary Fund, 2005§; Ministerio de Economía y Producción, 2005a§, c§).

During the year, the value of goods (in real terms) increased by 10.5%, and services, by 6.8%. The value of production in the construction sector (in real terms) continued to grow rapidly with a 29% increase during the year after a 34% increase in 2003. Despite improved mineral commodity prices during the year, mining and quarrying production (in real terms), which included petroleum and natural gas, decreased by 0.4%. The total value of consumption and investment increased by 67.8% and 55%, respectively, and net exports decreased by 22.8%. Inflation, as measured by the consumer price index, increased from 2.3% at the end of 2003 to 6.1% at the end of 2004. At the end of 2002, however, inflation had been 41.0%. In 2004, urban unemployment decreased to 11.7%, which was 50% of the level observed in May 2002 when unemployment reached its highest level (Ministerio de Economía y Producción, 2005a§, c§).

Investment in the mining sector increased significantly in 2004 and totaled more than $623 million; this was more than twice what the Government forecast in early 2004. Of this total, $533 was invested in production, and $90 million went to exploration. Mining investment in 2002 and 2003 were $102 million and $154 million, respectively (Panorama Minero, 2004; United Nations, 2005, p. 32, InfoMine, 2005§, Carlos Bossio, Mineral Statistics Coordinator, Dirección Nacional de Minería, written commun., October 18, 2005).

Government Policies and Programs

Argentina's legal framework for mining comprised an abstract of the Mining Code (the legal framework for investment in Argentina), Mining Investment Law No. 24.196, Regulating of Mining Investment (Decree No. 2.686/93) and its modification, law No. 25.429 (Decree 1.089/03), Mining Reorganization Law No. 24.224, Federal Mining Agreement Law No. 24.228, VAT Funding Law No. 24.402, Regulation of Law No. 24.402 (Decree No. 779/95), Mining Updating Law No. 24.498, Environmental Protection Code for the Mining Industry Law No. 24.585, and Royalty Law No. 25.161.

The Mining Code, which was approved by the Argentine Congress on May 21, 1997, regulates the rights, obligations, and procedures for the exploration, exploitation, and use of mineral substances. Some of the important features of law No. 24.196 include fiscal stability for 30 years, exemption of tariffs on capital goods, double deduction on exploration expenses, and accelerated amortization. The law limits royalties to 3% at the mouth of mine. Law No. 24.228 began the effort to harmonize the Provincial mining procedures, established public bidding for large-scale mining, and formalized the commitment to modernize the mining cadastre. Law No. 24.498 eliminated the mining register and reinstated the concession system for nuclear minerals. One of the important features of law No. 25.429 provides for the reimbursement of the value-added tax for exploration investment. The law also clarifies and modifies a number of articles of law No. 24.196.

In 2000, the Mining Integration Treaty (law No. 25.243) between Argentina and Chile was ratified. In 2001, the Government of Argentina approved Decree No. 111, which replaced article 5 of Decree No. 2.686/93 and the regulation of law No. 24.196 with the purpose of modernizing some technical regulations and addressing new issues that have resulted from mining integration with neighboring countries.

Changes in legislation since the 1990s have brought about significant changes in mining in Argentina. The metal sector has increased significantly in terms of output, and the participation of foreign companies has increased dramatically. Despite a decrease in spending during Argentina's recent economic crisis, investment and exploration have increased again, and a number of projects are scheduled to begin before the end of the decade. One project that has benefited from the changes as a result of law No. 25.243 was Pascua-Lama, which is a binational effort in Region III in Chile and the Province of San Juan in Argentina. The treaty and higher commodity prices were essential for the project to reach feasibility study status in 2004.

In 2004, increased domestic demand for natural gas in Argentina, which was competing with exports, reached a crisis level. In March, the Government, which gave priority to the domestic market, enacted Resolution No. 265/2004, which allowed the Government to suspend exports that could be used to supply the internal market, and to issue export permits, and to rationalize gas exports. Exports became possible if other sources were found to supply the internal market and if the limitations were excluded in areas where transportation and distribution infrastructures were not available. In June, an agreement for natural gas imports from Bolivia signed by Argentina and Bolivia alleviated Argentina's situation in the short term. In October, the two Governments signed another agreement to increase natural gas imports from Bolivia (Honoré, 2004, p. 36).

[1]References that include a section mark (§) are found in the Internet References Cited section.

Environmental Issues

The Secretaría del Ambiente and Desarrollo Sustentable, which was part of the Ministerio de Salud y Ambiente, is the Federal Government entity responsible for environmental matters. Under the Secretaría, the Consejo Federal de Medio Ambiente, which was formed by regional representatives and the Federal Government, is responsible for developing environmental policy, coordinating national and regional plans and programs, and working with all sectors of society on issues of environmental concern.

Environmental Protection Code for the Mining Industry (law No. 24.585), which was enacted on November 21, 1995, provides investors with the appropriate legal framework and requires that each Provincial Government create an enforcement authority within its jurisdiction. The law introduces the concept of sustainable development and sponsors a preventive environmental mechanism in the mining sector.

The environmental framework that relates to mining activities was completed with the establishment of Provincial Environmental Management Units. These units are responsible for assisting the Provincial enforcement authority in all aspects that relate to the code, specifically by assessing environmental impact reports and monitoring mining projects.

Law No. 25.675, which is the General Law of the Environment, was partially ratified by Congress in 2002.

In 2003, because of environmental concerns, the Province of Chubut passed law No. 5001, which prohibits cyanide open pit mining in the Province (Chubut.org, 2003§). The law charged the environmental council of the Province to establish areas for mineral production and the production method approved for each case within 120 days of promulgation of the law. The zoning had not been developed by yearend 2004. The law came after a referendum in which the people of Esquel voted overwhelmingly to reject gold mining by Minera El Desquite S.A. (a subsidiary of Meridian Gold Inc.) and resulted in work stoppage at the site. The company had submitted an environmental impact statement (EIS) to the Government in late 2002.

Production

The value of nonfuel mineral production in Argentina in 2004 was $1.5 billion (United Nations, 2005, p. 34; InfoMine, 2005§). Argentina's mineral production was of regional importance. The country was an important producer of nonfuel and fuel minerals in Latin America. According to U.S. Geological Survey data, it was one of only three producers of primary aluminum in the region, with about 12% of the total. The country was Latin America's third ranked producer of mine lead (after Peru and Mexico) and steel (after Brazil and Mexico) and the fourth ranked producer of mine copper (after Chile, Peru, and Mexico), primary iron (direct-reduced iron and pig iron) (after Brazil, Mexico, and Venezuela), and silver, although it produced a little more than 2% of the regional total. Argentina was one of six Latin American producers of mine zinc and produced about 8% of the gold output of the region.

Fuel minerals continued to be very important to Argentina's economy. In Latin America and the Caribbean, Argentina was the leading producer of natural gas and the fourth ranked producer of crude petroleum (after Mexico, Venezuela, and Brazil) (BP p.l.c., 2005, p. 6, 22).

The value of Argentina's nonfuel mineral production has changed significantly in the past decade. The importance of metal production has increased with the advent of large-scale mining since 1998. Almost two-thirds of the mineral production was from the large-scale mining companies. The remainder was from the small- and medium-sized mining companies. In 2004, about 89% of the production was from 10 Provinces. The leading producing Provinces were, in decreasing order of value, Catamarca (copper, gold, and lithium), Santa Cruz (a significant production of gold and silver), and Buenos Aires (clays, crushed stone, limestone, and sand). These three Provinces represent 65% of Argentina's mineral production. About 70% of Argentina's mineral production was exported (Dirección Nacional de Minería, 2005; Agencia de Desarrollo de Inversiones, 2003§).

Trade

Argentina's exports of goods totaled $34.6 billion. The country's imports (c.i.f.) totaled $21.3 billion. The large increase in exports was, in part, the result of the increase in the prices of exported fuels and agricultural commodities. Argentina's main trading partners were, in order of value, the countries of the Mercado Común del Cono Sur (MERCOSUR), the countries of the European Union, and the countries of the North American Free Trade Agreement. Collectively, these three groups accounted for 78% of Argentina's imports and 51% of its exports. Individually, Brazil was Argentina's main trading partner followed by Chile and the United States. Brazil received 16% of Argentina's exports and provided 36% of its delivered imports. The United States received 11% of Argentina's exports and provided 16% of its imports. China received about 8% of Argentina's exports and provided 5% of its imports.

Exports of the nonfuel mineral sector have increased significantly since 1991 when the value was only $10 million. In 2004, the value of Argentina's mineral trade totaled $1.8 billion; of this, the value of copper concentrate was $642.4 million. Exports of manufactured goods of industrial origin totaled $9.5 billion; of this, metals (excluding precious metals) and their products accounted for $1.67 billion, precious metals and precious stones amounted to $145.5 million, and dimension stone, gypsum, and ceramics products were valued at $123.6 million. Exports of fuels and energy totaled $6.17 billion; of this, crude petroleum accounted for $2.3 billion (InfoMines, 2005§, Ministerio de Economía y Producción, 2005b§).

Structure of the Mineral Industry

Argentina's highest Government office with responsibility for the mining sector was the Secretaría de Minería de la Nación. After residing in the Ministerio de Producción since early 2002, the Secretaría was moved to the newly formed Ministerio de Planificación

Federal, Inversión Pública y Servicios in 2003 by Decree No. 1142/2003. The Secretaría was responsible for developing the country's mineral policy, promoting the growth of the mineral sector, and creating the conditions to encourage investment in the area. It also had the authority to carry out norms and legislation relevant to the mineral sector and was the authority with the responsibility to negotiate national and international agreements on behalf of the Government. As the Government entity to which the Servicio Geológico Argentino (SEGEMAR) reports, the Secretaría also was responsible for promoting geologic and mining studies with the purpose of planning the use of the mineral resources of the country. SEGEMAR, which was formed by Decree No. 660/1996, was charged with managing a variety of geologic programs and services based on scientific studies. Its objectives included the coordination and actualization of Argentina's geologic information, contribution to the discovery of resources, and offering of technical assistance to the small- and medium-sized mining sectors (Panorama Minero, 2001).

The Dirección Nacional de Minería was responsible for administrating law No. 24.196 and its modifications. The Dirección was also charged with coordinating and developing Argentina's short- and long-term strategic mining plans and acting as an advisor to the Secretariat on technical and legal matters that affect the mining sector. It also was responsible for promoting actions to maintain dynamic small- and medium-sized mining sectors. The Dirección processed and disseminated all mining statistics.

In addition to the Federal Government, the Provincial Governments had offices in charge of mining issues. They were the entities responsible for awarding the mineral concessions in accordance with the Mining Code. They also ensured that the mines adhere to the environmental protection laws and apply Provincial norms.

In the early 1990s, only seven international mining companies were exploring or producing in Argentina. In 2004, more than 50 companies were active in the mineral industry of Argentina (United Nations, 2005, p. 8). Some of the private mineral and manufacturing companies in the sector were Aluminio Argentino S.A.I.C. (ALUAR), Borax Argentina S.A., Cementos Loma Negra C.I.A.S.A., Cerro Vanguardia S.A., Cía. Minera Aguilar S.A., Cía. Minera Tea S.A.M.I.C.A.F., Cía. Sulfacid S.A.C.I.F., FMC Minera del Altiplano S.A., and Minera Alumbrera Ltd. (table 2). In 2003 (the last year for which data were available), direct employment in the mining sector was 22,000, and an early 2004 projection expected it to reach 29,400 by 2006 (Agencia de Desarrollo de Inversiones, 2004§).

Commodity Review

Metals

Aluminum.—The sole producer of primary aluminum in Argentina was ALUAR with a smelter and two semifabricated products facilities in Puerto Madryn, Province of Chubut. The company, which also owned a lamination and extrusion plant in Abasto, Province of Buenos Aires, had a total workforce of 1,700. In 2004, production of aluminum in Argentina decreased slightly to 272,048 metric tons (t) from 272,369 t (revised) in 2003; this was almost 99% of its production capacity of 275,000 t (Ministerio de Economía y Producción, 2005c§). The company's sales, which included primary aluminum and finished and semifinished products, for the fiscal year ending in June, totaled 283,400 t; 68% (194,600 t) of this was in the form of primary aluminum. Most of the primary aluminum (82%) was exported, and 18% was for the domestic market (Aluminio Argentino S.A.I.C., 2005a§, b§).

During the year, ALUAR announced plans to increase the production capacity of its smelter by 122,500 t. The expansion project, which was estimated to cost more than $650 million, was to begin in 2005. In addition to expanding the three existing potlines, the project would include the construction of a new potline, the expansion of the anode plant, the installation of electric generation equipment, and the installation of a new billets-casting station. The project was expected to be completed in 2007 (Alumino Argentino S.A.I.C., 2005b§).

Copper, Gold, and Silver.—Mine production of copper in 2004 decreased by 11% to 177,143 t. Production of gold also decreased (by about 4%) to 28,466 kilograms (kg), but output of silver increased significantly (by 29%) to 172,387 kg. Almost all copper production (176,439 t) was from Minera Alumbrera's Bajo de la Alumbrera Mine in the Province of Catamarca. Minera Alumbrera also produced 69% of Argentina's gold with 19,693 kg (reported as 663,166 troy ounces) (Mining Technology, 2005§). The mine produced doré and gold in concentrate. Because the Bajo de la Alumbrera Mine was the leading producer of copper and gold, its decrease in output had a significant impact on Argentina's output. The company's decrease in copper and gold production was owing to a decrease in the grades of copper and gold in the ore—its copper content of ore decreased from 0.65% to 0.56%. Gold content decreased to 0.72% from 0.81% (Xstrata plc, 2005, p. 51, 53). Xstrata plc of Switzerland owned 50% of Minera Alumbrera; Wheaton River Minerals Ltd. of Canada, 37.5%; and Northern Orion Resources Inc., 12.5%. In 2004, Xstrata announced an increase in reserves of an additional 80 million metric tons (Mt) at Bajo de la Alumbrera. With the new reserves and the improvement of the copper price, proven reserves were increased by 20%, which was equivalent to 350,000 t of copper and 37,324 kg (1.2 million troy ounces) of gold. On the basis of the new reserves, the life of the mine was to be extended by 2.5 years until 2015 (Minera Alumbrera Ltd., 2004).

The second ranked gold producer in Argentina was Cerro Vanguardia, which is an open pit mine in the Province of Santa Cruz. The mine was owned by AngloGold Ashanti Limited (92.5%) and the Province of Santa Cruz (7.5%). Production from Cerro Vanguardia was almost 7,100 kg (reported as 211,000 troy ounces attributed to AngloGold) despite lower production during the first quarter of the year owing to lower ore grade (AngloGold Ashanti Limited, 2005, p. 30). Together, Bajo de la Alumbrera and Cerro Vanguardia produced about 94% of Argentina's gold and were significant producers of silver.

In addition to the production from Bajo de la Alumbrera and Cerro Vanguardia, several copper, gold, and silver projects were at various stages of exploration. Barrick Gold Corporation completed a feasibility study of the Veladero gold project in the Province of San Juan in the third quarter of 2002. The study called for two open pits, a two-stage crushing circuit, and a heap-leach pad. Construction cost, which was originally estimated to be $460 million, was increased to $540 million in 2004 because of, among other

things, the higher prices of fuel and construction materials, and exchange rate variations. Barrick reported that production from the project was on schedule to begin in the fourth quarter of 2005 and that the EIS had been approved in late 2003. Production was scheduled for the fourth quarter of 2005. Planned output from the mine was upgraded to about 21,800 kilograms per year (kg/yr) (reported as 700,000 troy ounces per year) of gold at a total cash cost of $200 per troy ounce. During 2004, the project was 65% complete, and work began on the construction of the heap leach pad. At yearend 2004, Barrick reported that Veladero's proven and probable reserves were increased by 16% to about 399,600 kg (reported as 12.849 million troy ounces) of gold (Barrick Gold Corporation, 2005, p. 13, 42, 126; 2005§).

Barrick was also involved in the Pascua-Lama project in the same district as Veladero, on the Chile-Argentina border. In 2004, Barrick decided to go ahead with the development of Pascua-Lama after receiving the necessary Government permits, which were expected to be completed by the end of 2005. The project, which extends past the border with Chile, was expected to be a binational effort and would benefit from recent legislation approved by both countries. Pascua-Lama was expected to begin construction immediately after permits were secured and had a targeted production beginning time of 2009. Gold production from Pascua-Lama was expected to be between 23,300 and 24,100 kg/yr, and silver production for the duration of the project was anticipated to exceed 930,000 kg (reported as 30 million troy ounces). The project, which would produce concentrate and doré, was estimated to cost about $1.5 billion to construct. At yearend 2004, the project's proven and probable gold reserves were about 547,000 kg (reported as 17.6 million troy ounces) (Barrick Gold Corporation, 2004, p. 15, 113; 2005, p. 15, 126).

A setback to Argentina's plans for gold development were the decisions by the Government of the Province of Chubut to outlaw open pit mining and the use of cyanide for metal recovery. This decision delayed plans by Meridian Gold Inc. to develop its Esquel (El Desquite) gold deposit that it had purchased from Brancote Holding Plc. in 2003. The company intended to develop an open pit mine. The project, however, was put on hold as the result of a referendum in March that indicated that the majority of the local population (81%) was against the development of the mine (Meridian Gold Inc., 2004a§, b§). Despite these events, Meridian continued to include the project as part of its long-term plans and was exploring alternate extraction methods and continued to communicate with the community to address its concerns with the project (Meridian Gold Inc., 2005, p. 20).

Iron and Steel.—In 2004, efforts began to reopen the Sierra Grande iron ore mine (formerly known as Hipasam) in the Province of Rio Negro; the mine had been closed since the early 1990s. A Chinese investment company, A Grade Trading, and the Government of the Province of Rio Negro signed an agreement in December to reactivate the mine. Compañía Minera Sierra Grande S.A. was created to operate the mine. The cost of reactivation was estimated to be $21 million, of which $8 million was to be used in the first 18 months for the mine reactivation, the concentration plant, the Punta Colorada Port, and the repair of the concentrate transportation system. A new pelletizing plant was scheduled to be constructed. After 2 years of facilities modernization, the operation will reach a production capacity of 2.5 million metric tons per year (Mt/yr) of iron. Plans called for the pellets to be exported (Barinoticias, 2005§).

After 2 years of significant increases, production of iron (pig iron and direct-reduced iron) remained at about the same level as that of 2003 at 4.1 Mt. In a similar fashion, production of crude steel increased by less than 2% to 5.1 Mt. The leading steel producer in Argentina was Siderar S.A.I.C. with a production capacity of 2.6 Mt/yr. In 2004, Siderar's steel production decreased by 2% to 2.49 Mt from 2.54 Mt (revised) in 2003. The main reason for the small decrease was scheduled repairs and other improvements. The company earnings of $1.3 billion included $383 million from the Venezuelan producer Siderúrgica del Orinoco C.A. (SIDOR) as a result of stronger prices. During the third quarter, the company was able to cancel its restructuring debt (Siderar S.A.I.C., 2005, p. 2-11).

Responding to increased demand from the Argentine industrial sector (agriculture, automotive, and construction), Siderar's domestic shipments increased by 26% to 1.56 Mt. Shipments to foreign markets, however, decreased by 40% from those of 2003 to 612,000 t. Of the total, 41% was exported to Europe; 33%, to Latin America; 19%, to North America; 6%, to Asia; and 1%, to Africa. During the year, the company invested $262 million in its facilities (Siderar S.A.I.C., 2005, p. 2-11).

Argentina's second leading steel producer Acindar Industria Argentina de Aceros S.A. produced almost 1.34 Mt (a 6% increase compared with that of 2003) and had shipments of 1.27 Mt. Of the total shipments, about 78% went to the domestic market; this was an increase of about 26% after a 40% increase in 2003 mainly because of increased demand in the automotive and agricultural sectors. Exports decreased by about 8% (Acindar Industria Argentina de Aceros S.A., 2005, p. 5, 7).

Industrial Minerals

Boron.—Argentina was the leading boron minerals producer in South America. In 2004, production of crude boron minerals increased by 60% to 821,031 t from 512,167 t (revised) in 2003. About 58.6% of the production was from the Province of Salta where the largest producer Borax Argentina (a subsidiary of Rio Tinto Borax of the United Kingdom) had two of its three mines in Argentina. The reminder of the production was from the Provinces of Juyuy (38.5%) and Catamarca (2.9%) (Carlos Bossio, Mineral Statistics Coordinator, Dirección Nacional de Minería, written, commun., October 18, 2005).

Cement.—Argentina's cement production in 2004 was about 6.3 Mt. This was a 20% increase from that of 2003 after a 33% increase from that of 2002 but was still almost 13% lower than the production achieved in 1999 and only about 38% of the total installed capacity of 16.6 Mt. As in 2003, the growth in production was again a reflection of the significant improvement in the construction sector. Most of Argentina's production (almost 6.1 Mt) was consumed domestically. This represented a 22% increase in domestic consumption from that of 2003 (Asociación de Fabricantes de Cementos Portland, 2005§; Minsiterio de Economía y Producción, 2005b§). A small amount of cement and clinker was exported. The leading cement producer in Argentina was Cementos Loma Negra C.I.A.S.A. with a yearly capacity of 6 Mt (table 2).

Despite the low use of the installed capacity, Empresa Petroquímica Comodoro Rivadavia, S.A. announced plans in 2004 to construct a 600,000-t cement plant in Pico Truncado, Province of Santa Cruz. Plans called for construction to begin in 2005 with an investment of $55 million; the Province would provide partial financing (La Opinión Austral, 2005§). Cementos Goliat of Spain also announced plans for another cement plant. The plant, which would have a production capacity of 500 metric tons per month, was to be constructed in the city of Rosario (about 400 kilometers from Buenos Aires). Initial plant production was planned for the domestic market, but the company was considering exporting part of the production (ArgenMedios, 2005§; Empresas, 2005§).

Lithium.—Argentina's production of lithium was from the Province of Catamarca. Minera del Altiplano S.A. (a subsidiary of FMC Corporation of the United States) produced lithium from brines from its $110 million Fenix Mine in the Salar del Hombre Muerto. The company also had two plants—one in the Salar where it produced lithium chloride and another near Ciudad de General Güemes where it produced lithium carbonate for exports to Europe, Japan, and the United States. The production of lithium carbonate and lithium chloride increased by 74% and by 34%, respectively. During the year, production was uninterrupted (for the first time since production began); this was the main reason for the increased levels of production (El Pregón Minero, 2004§).

Mineral Fuels

As domestic consumption increased in 2004, Argentina was faced with energy shortages, especially in natural gas, which was of great importance to the country's energy sector. During the year, however, the Government developed its 2004-08 energy plan. This plan included expansion of the natural gas transportation infrastructure, improvement of the power network, price adjustment and market liberalization, and mechanisms and incentives to increase exploration efforts in the hydrocarbon sector to reverse the trend of decreasing reserves. Some of the Government actions in fulfillment of the plan included signing a 3-year cooperation agreement, which included the supply of fuel oil, with the Government of Venezuela; an agreement with Brazil for the supply electricity; and an agreement with Bolivia for the supply of natural gas (Minsiterio de Planificación Federal, Inversión Pública, y Servicios, 2005§).

Coal.—In December, the Government of Argentina and the Ministry of Industry and Commerce of the Czech Republic signed an agreement for the construction of a powerplant in the Rio Turbio coal basin in the Province of Santa Cruz. The 35-megawatt plant, which was estimated to cost $40 million, would be financed by the Czech Government and operated by Skodaexport Argentina S.A. The plant would be located adjacent to Yacimientos Carboníferos de Río Turbio S.A.'s coal mine, which in recent years had been struggling to keep up with production levels and to meet its contractual obligations (Auditoría General de la Nación, 2003; Secretaría Nacional de Minería, 2004a§).

Natural Gas.—Argentina depended heavily on natural gas to meet its energy requirements, and the country was a net exporter of this commodity. About 49% of the country's primary energy came from natural gas (Secretaría de Energía, 2005b§). During the year, production of natural gas in Argentina was not sufficient to meet domestic demand and its export contractual obligations with Chile, which received more than 90% of Argentina's natural gas exports in 2002. Instead, the country was forced to import natural gas from Bolivia and to ration energy. The agreement with Bolivia allowed imports of natural gas up to 4 million cubic meters per day. Later in the year, another agreement was signed that could increase the imports from Bolivia by up to 20 million cubic meters per day.

In 2004, production of gross natural gas increased by 3%, and that of marketed natural gas increased by an estimated 9%. Argentina continued to be Latin America's leading producer of natural gas. In 2004, 53% of gross production was from the Neuquen Basin in central Argentina followed by the Provinces of Salta with 14%, Tierra del Fuego with 10%, and Santa Cruz with almost 10%. The leading producing company was Repsol-YPF with about 33% of the total. The second ranked producing company was Total Austral S.A. with almost 22% of the total (Honoré, 2004; BP p.l.c., 2005, p. 22; Alexander's Oil & Gas Connections, 2004§; Secretaría de Energía, 2005a§, b§; U.S. Energy Information Administration, 2005§).

Petroleum.—Argentina was Latin America's fourth ranked producer of crude petroleum after Mexico, Venezuela, and Brazil (BP p.l.c., 2005, p. 6). Production in 2004 was 254 million barrels (reported as 40,415 thousand cubic meters); this was a decrease of about 6% after a 2% decrease in 2003 and a 3% decrease in 2002. Petroleum proven reserves have been decreasing since 1999. In 2004, proven reserves totaled 2.3 billion barrels (reported as 368.9 billion cubic meters). At the 2004 production rate, reserves would be depleted in about 9 years (Secretaría de Energía, 2005, p. 27). The Province of Neuquen produced 30% of the total; the Province of Chubut, about 23%; and the Province of Santa Cruz, 21% (Secretaría de Energía, 2005, p. 1; 2005b§)

By far, the leading producing company was Repsol-YPF with 45% of the total output and 39% of the reserves (Secretaría de Energía, 2005, p. 10). The second and third ranked producers were Pan American LLC and Petrobrás Energía with about 13% and 10% of the production, respectively. Petrobrás Energía S.A. announced plans to invest $1.4 billion in 5 years toward production expansion in Argentina (Rigzone.com, 2003§).

Outlook

The nature of Argentina's mining sector changed drastically after the new copper and gold producer Minera Alumbrera and the gold and silver producer Cerro Vanguardia came onstream. Despite Argentina's recent economic problems, especially in 2001 and 2002, other large metal projects were at different levels of evaluation or development, and some of them are expected to come onstream in 2005. As Argentina's economic situation improved, investment, which had slowed in 2001, began to increase slowly in 2002 and 2003 and increased significantly in 2004. The increased prices of copper, gold, and other metals and the country's mineral potential and legal stability are among the reasons why Argentina has become an attractive country for mining investment. The Government, which under the Mining Plan of 2004 declared its intention of having mining as one of the important areas of development, expects the level of investment to reach almost $1.5 billion in 2005 with a significant portion of it coming from such new projects as Agua Rica in the Province of Catamarca ($325 million), El Pachon in the Province of San Juan ($250 million), Pascua-Lama and Veladero

also in the Province of San Juan ($250 million and $200 million, respectively), and Pirquitas in the Province of Jujuy ($100 million). The level of investment is expected to continue to increase and to reach $1.8 billion in 2007. The Government expects the value of metal mining (including lithium) to increase to $1.2 billion in 2005 and $1.7 billion in 2006 and to reach $2.6 billion in 2007. A large portion of this total is expected to be exported (United Nations, 2005, p. 20; Secretaría Nacional de Minería, 2004b§).

A nation that is highly dependent on natural gas for its industrial activity, Argentina has taken initial steps to deal with the gas shortage it faced in 2004. The contracts signed with Bolivia to import natural gas will give Argentina some time to develop long-term policies to increase investment in the natural gas sector.

References Cited

Acindar Industria Argentina de Aceros S.A, 2005, Memorias del ejercicio No. 63 cerrando el 31 de diciembre de 2004 [Company annual report No. 63 ending on December 31, 2004]: Buenos Aires, Argentina, Acindar Industria Argentina de Aceros S.A, March 12, 93 p.

AngloGold Ashanti Limited, 2005, Company annual report 2004: Johannesburg, South Africa, March 10, 191 p.

Barrick Gold Corporation, 2004, Company annual report 2003: Toronto, Ontario, Canada, Barrick Gold Corporation, March 1, 120 p.

Barrick Gold Corporation, 2005, Company annual report 2004: Toronto, Ontario, Canada, Barrick Gold Corporation, March 1, 136 p.

BP p.l.c., 2005, BP statistical review of world energy: London, United Kingdom, BP p.l.c., June, 41 p.

Honoré, Anouk, 2004, Argentina—2004 gas crisis: Oxford, United Kingdom, Oxford Institute for Energy Studies, November, 41 p.

Meridian Gold Inc., 2005, Company annual report: Reno, Nevada, Meridian Gold Inc., February, 46 p.

Minera Alumbrera Ltd., 2004, Se extiende la vida útil de Bajo de la Alumbrera [The useful life of Bajo de la Alumbrera is extended]: Buenos Aires, Argentina, Minera Alumbrera Ltd. press release, June 22, 1 p.

Panorama Minero, 2001, El organismo científico nacional al servicio de la industria minera [The national scientific organization at the service of the mining industry: Panorama Minero, no. 256, January, p. 14-22.

Panorama Minero, 2004, El lanzamiento del plan minero [The launch of the mining plan]: Panorama Minero, no. 291, January, p. 12-18.

Secretaría de Energía, 2005, Anuario de reservas 2004 [Reserves yearbook 2004]: Buenos Aires, Argentina, Secretaría de Energía, August, 67 p.

United Nations, 2005, Situación y perspectivas de la minería metálica en Argentina [Situation and outlook of the metallic mining in Argentina]: Santiago, Chile, United Nationas Comisión Económica para América Latina y el Caribe, May, 61 p.

Xstrata plc., 2005, Company annual report 2004: Zug, Switzerland, Xstrata plc., March, 180 p.

Internet References Cited

Agencia de Desarrollo de Inversiones, 2003, Análisis de la minería en Argentina [Analysis of mining in Argentina], accessed June 27, 2003, at URL http://www.inversiones.gov.ar/esp/publicaciones/mineria_analisis.pdf.

Agencia de Desarrollo de Inversiones, 2004 (February), Inversiones dirigidas a la provisión del sector minero [Investment directed toward the mining sector], accessed November 16, 2005, at URL http://www.inversiones.gov.ar/documentos/boletin/0204news.pdf.

Alexander's Gas & Oil Connections, 2004 (May 6), Argentina signs gas import accord with Bolivia, accessed November 17, 2005, at URL http://www.gasandoil.com/goc/news/ntl41802.htm.

Aluminio Argentino, S.A.I.C., 2005a, Información financiera y contable [Financial and accounting information], accessed August 30, 2005, at URL http://www.aluar.com.ar/es/compania.asp?id_categoria=77.

Aluminio Argentino, S.A.I.C., 2005b, Novedades [News], accessed August 30, 2005, at URL http://www.aluar.com.ar/es/novedad.asp?id_contenido=149.

ArgenMedios, 2005 (March), In forme de negocios, Cemento, accessed August 23, 2005, at URL http://www.grupominetti.com.ar/admin/items/Minetti%20180.pdf.

Asociación de Fabricantes de Cemento Portland, 2005, Datos Estadísticos de La Industria del Cemento Pórtland 2004, accessed August 3, 2005, at URL http://www.afcp.org.ar/estadisticas-info-anuales.htm.

Auditoría General de la Nación, 2003 (February 3), Yacimientos Carboníferos Río Turbio, accessed July 25, 2003, at URL http://www.agn.gov/ar/body-noticias-03-02-03.htm.

Barrick Gold Corporation, 2005, Veladero, Global Operations—South America, accessed November 16, 2005, at URL http://www.barrick.com/index.aspx?usesid=-1&sid=65.

Barinoticias, 2005 (February 24), El gobernador Saiz pone en marcha la reactivación del complejo minero Hiparsa [Governor Saiz begins the reactivation of the Hiparsa mining complex], accessed October 18, 2005, at URL http://www.barinoticias.com.ar/index.php?option+com_content&task+view&id=417&Itemid=53.

Chubut.org, 2003, Ley perteneciente al período (Gobernador) Lizurume, Prohibición en la Provincia del Chubut a la actividad minera metalífera con modalidad a cielo abierto y utilización de cianuro [Law from (Governor) Lizurume, Prohibition in the Province of Chubut of metal mining activity by open pit and using cyanide], accessed November 16, 2005, at URL http://www.chubut.gov.ar/sitio/digesto/archives/002021.php.

El Pregón Minero, 2004 (November 11), Entrevista al Contador Oscar Lacher, Presidente de Minera del Altiplano [Interview of Oscar Lacher (accountant), President of Minera del Altiplano, accessed September 1, 2005, at URL http://www.editorialrn.com.ar/editorialm/pminero/pm2004-11/pm2004-11-40.html.

Empresas, 2005, La cementera Goliat invertirá 15 millones [Euros] en Argentina [Golliat Cement will invest 15 million Euros in Argentina, accessed September 1, 2005, at URL http://www.construccion-es.com/main_empresas.htm.

InfoMine, 2005 (February 9), Se triplicaron las inversions en Argentina [Investment tripled in Argentina], accessed September 1, 2005, at URL http://www.infomine.com/news/editorials/partners/panmin/2005/0034.asp.

Instituto Nacional de Estadística y Censos, 2005, Estimaciones trimestrales del balance de pagos y de activos y pasivos externos de la República Argentina [Quarterly estimates of balance of payments and the external assets and liabilities of the Argentine Republic], accessed August 30, 2005, via URL http://www.indec.mecom.gov/ar.

International Monetary Fund, 2005, Argentina, World Economic Outlook Database, accessed August 29, 2005, at URL http://www.imf.org/external/pubs/ft/weo/2005/01/data.

La Opinión Austral, 2005 (February 17), Fideicomiso y cementera afectarán 38,5 millones de dólares para la cementera de Pico Truncado, accessed September 1, 2005, at URL http://laopinionaustral.net/index.php?url_channel_id=7&url_publish_channel_id=14350&well_id=2.

Meridian Gold Inc., 2004a, Esquel Project, accessed January 31, 2005, at URL http://www.meridiangold.com/operations_esquel.cfm.

Meridian Gold Inc., 2004b (March 24), Meridian Gold reports of the local Esquel non-binding referendum, accessed January 31, 2005, at URL http://investor.meridiangold.com/phoenix.zhtml?c=73063&p=irol-newsArticle&ID=393561&highlight.

Mining Technology, 2005, Bajo de la Alumbrera copper and gold mine, Argentina, accessed September 26, 2005, at URL http://www.mining-technology.com/projects/bajo.

Ministerio de Economía y Producción, 2005a, La economía Argentina durante 2004 y evolución reciente [The Argentine economy during 2004 and recent developments], accessed August 29, 2005, at URL http://www.mecon.gov.ar/peconomica/informe/informe51/introduccion.pdf.

Ministerio de Economía y Producción, 2005b, Sector Externo [External Sector], various tables, accessed August 30, 2005, via URL http://www.gov.ar/peconomica/basehome/infoeco.html.

Ministerio de Economía y Producción, 2005c, Ventas al mercado interno de producción nacional [Sales of national production to the domestic market], accessed August 30, 2005, via URL http://www.mecon.gov.ar/peconomica/informe/informe52/apendice_estadistico.htm.
Minsiterio de Planificación Federal, Inversión Pública, y Servicios, 2005, Plan Energético Nacional 2004-2008 [National Energy Plan 2004-2008], accessed September 8, 2005, via URL http://energia.mecon.gov.ar.
Rigzone.com, 2003 (October 31), Petrobras to invest US$ 1.4 billion on Argentina exploration, accessed November 10, 2003, at URL http://www.rigzone.com/news/article.asp?a_id=9213.
Secretaría de Energía, 2005a, Presentación del Secretario en la 10 Conferencia Industrial Argentina [The Secretary's Presentation at the 10th Argentine Industrial Conference], accessed November 20, 2005, at URL http://energia.mecon.gov.ar/novedades/conferencia_industrial.htm.
Secretaría de Energía, 2005b, Producción de gas, accessed November 20, 2005, via URL http://www.energis.mecom.gov.ar/UpStream?US-EGas_Cons2.asp.
Secretaría Nacional de Minería, 2004a, Acuerdo con República Checa para construir central térmica de Río Turbio [Agreement with the Czech Republic to build the Río Turbio thermoelectric plant], accessed October 13, 2005, at URL http://www.mineria.gov.ar/noticias/nota.asp?bol=12&nota=367&titpag=.
Secretaría Nacional de Minería, 2004b (January), Plan nacional minero, accessed October 14, 2005, via URL http://www.mineria.gov.ar/noticias/nnoticias2004.asp?num=1&titpag=Noticias.
U.S. Energy Information Administration, 2005 (January), Argentina, Country Analysis Brief, accessed September 7, 2005, at URL http://www.eia.doe.gov/emeu/cabs/argentna.html.

Major Sources of Information

Asociación de Fabricantes de Cementos Portland
Av. San Martín 1137, Piso 1
C1004 Buenos Aires, Argentina
Telephone: (54-11) 4576-7695
Fax: (54-11) 4576 7699
Dirección de Inversiones Mineras (Directorate of Mining Investment)
Av. Julio Roca 651, Piso 8
C1067 ABB Buenos Aires, Argentina
Telephone: (54-11) 4349-3232
Dirección Nacional de Minería (National Directorate of Mining)
Av. Julio Roca 651, Piso 8
C1067 ABB Buenos Aires, Argentina
Telephone: (54-11) 4349-3202
Fax: (54-11) 4349-3167
Servicio Geológico Argentino (Argentine Geological Survey)
Av. Julio Roca 651, Piso 3
C1067 ABB Buenos Aires, Argentina
Telephone: (54-11) 4349-3127
Fax: (54-11) 4349-3129

TABLE 1
ARGENTINA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity		2000	2001	2002	2003	2004
METALS						
Aluminum:						
Primary		262,394	245,052	268,805	272,369 r	272,048
Secondary[e]		16,000	16,000	16,000	16,000	16,000
Cadmium:						
Mine output, Cd content		137	160	153	126	111
Refined		--	34	--	25	39
Copper:						
Mine output, Cu content		145,197	191,677	204,027	199,020	177,143
Refined[e]		16,000	16,000	16,000	16,000	16,000
Gold, mine output, Au content	kilograms	25,954	30,632	32,506	29,744	28,466
Iron and steel:						
Metal:						
Pig iron	thousand metric tons	2,186	1,916	2,180	2,402	2,392
Sponge iron (direct reduction)	do.	1,420	1,276	1,476	1,736	1,755
Total	do.	3,606	3,192	3,656	4,138	4,147
Ferroalloys, electric furnace:						
Ferrosilicomanganese		4,900	5,150	5,000 e	5,000 e	5,000 e
Ferrosilicon		2,500	2,740	2,700 e	2,700 e	2,700 e
Total		7,400	7,890	7,700 e	7,700 e	7,700 e
Steel, crude	thousand metric tons	4,474	4,107	4,363	5,033	5,125
Semimanufactures[2]	do.	4,174	3,859	3,821	4,680	4,799
Lead:						
Mine output, Pb content		14,115	12,334	12,011	12,079	9,551
Smelter, primary[e]		14,200	12,300 r	12,000 r	12,100 r	9,600
Refined:						
Primary		8,665	9,473	10,567	11,011	9,500 e
Secondary		27,000	25,960	33,000	30,300	39,600 e
Total		35,665	34,473	43,567	41,311	49,111
Silver, mine output, Ag content	kilograms	78,271	152,802	125,868	133,917	172,387
Tin, refined		100	100	100	100	120
Zinc:						
Mine output, Zn content		34,858	39,703	37,325	29,839	27,220
Metal, smelter:						
Primary		36,359	39,727	38,699	39,221	35,300 e
Secondary		2,910	3,180	3,098	3,139	3,000 e
Total		39,269	42,907	41,797	42,360	38,298
INDUSTRIAL MINERALS						
Asbestos		254	203	155	166	267
Barite		5,472	6,955	3,048	6,934 r	2,762
Boron materials, crude		512,624	631,519 r	515,555 r	512,167 r	821,031
Cement, hydraulic	thousand metric tons	6,121	5,545	3,911	5,217	6,254
Clays:						
Bentonite		123,092	104,335	120,006	146,845 r	163,028
Common		2,374,294	1,515,002	1,506,146	1,682,158 r	2,297,634
Foundry earth[e]		100,000	100,000	100,000	100,000	100,000
Fuller's earth (decolorizing clay)[e]		1,500	1,500	1,500	1,500	1,500
Kaolin		34,023	13,584 r	13,865 r	19,219 r	27,883
Diatomite		17,663	17,090	23,314	35,518 r	8,180 p
Feldspar		59,466	48,522	82,642	90,857 r	104,631
Fluorspar		11,200	9,075	5,168	5,422 r	6,189
Gypsum, crude		582,337	371,527	365,556	489,805 r	673,430
Lithium:[3]						
Carbonate		2,161	--	906	2,850	4,970
Chloride		5,182	4,512	4,729	4,700	6,303

See footnotes at end of table.

TABLE 1--Continued
ARGENTINA: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity		2000	2001	2002	2003	2004
INDUSTRIAL MINERALS--Continued						
Mica		4,665	2,120	1,770	1,894	2,178
Nitrogen, N content of ammonia		189,800	596,600	616,700	723,900	642,600
Perlite		17,521	17,916	17,152	21,480 r	21,193
Pumice		15,512	2,097	3,070	3,531	9,188
Salt		1,348,514	1,269,815 r	1,080,346 r	1,667,851 r	1,361,708
Sand and gravel:						
Sand:						
Construction		12,450,441	10,538,439 r	9,365,599 r	11,981,150 r	16,666,633
Silica sand (glass sand)		495,903	891,127	280,065	300,707 r	847,767
Gravel		5,967,771	4,067,117 r	4,666,257 r	6,565,097 r	11,179,799
Stone:						
Basalt		363,277	436,947	177,090	334,542 r	615,412
Calcareous:						
Calcite, nonoptical		34,024	96,269	85,299	91,270	104,960
Calcium carbonate, chalk[e]		30,000	30,000	30,000	30,000	30,000
Dolomite		744,041	303,695	278,361	318,913 r	377,155
Limestone		10,605,739	6,073,902	7,060,763	8,147,901 r	10,586,703
Crushed, unidentified		10,360,967	5,668,962 r	3,785,570 r	4,463,493 r	6,249,111
Marble, onyx, travertine		218,800	38,228	40,397 r	44,411 r	48,926
Flagstone		199,135	146,909	155,079	390,350 r	528,783
Granite, in blocks		48,605	41,317	40,450	48,156 r	57,536
Quartz, crushed		78,024	49,720	93,614	99,097 r	113,961
Quartzite, crushed		776,011	386,336	247,394	284,503	384,079
Rhodochrosite		17	17	22	24	109
Gemstones (agate, amethyst, apolo, tourmaline, etc.)	kilograms	19,058	10,200	1,250	43,288 r	50,599
Sandstone[e]		200	200	200	200	200
Serpentine, crushed		143,000	--	826	950	1,200
Shell, marl		272,728	177,587 r	169,577	195,014	263,269
Tuff (tosca)	thousand metric tons	4,940	4,627 r	2,721	3,129	3,717
Strontium minerals, celestite		4,656	3,655 r	2,595 r	4,300 r	6,727
Sulfates, natural:						
Magnesium (epsomite)		6,900	6,900	6,900	7,383	8,490
Sodium (mirabilite)		10,446	11,856	10,081	10,787	12,405
Talc and related materials:						
Pyrophyllite		3,877	2,155	1,770	1,894	2,178
Steatite[e]		300	300	300	300	300
Talc		6,730	1,665	1,643	1,700 r	7,620
Total		10,907	4,120	3,713	3,894 r	10,098
Vermiculite		--	1,110	1,050	1,124	1,293
MINERAL FUELS AND RELATED MATERIALS						
Asphalt and bitumen:						
Natural (asphaltite)		50	--	--	--	521
Byproduct of refinery		533,703	393,386 r	318,290	478,991	645,181
Coal, bituminous	thousand metric tons	246	150	56	118 r	120
Coke, all types, including breeze	do.	1,501 r	1,545 r	1,582	1,621 r	1,546
Gas, natural:						
Gross	million cubic meters	44,815 r	45,916 r	45,770 r	50,576 r	52,317
Marketed	do.	37,412	37,145	36,468	41,119	45,000 e
Natural gas liquids	thousand 42-gallon barrels	18,200	18,000	18,000 e	18,000 e	18,000 e
Peat, agricultural (turba)		10,159	1,067	8,208	8,782	110,844

See footnotes at end of table.

TABLE 1--Continued
ARGENTINA: PRODUCTION OF MINERAL COMMODITIES [1]

(Metric tons unless otherwise specified)

Commodity		2000	2001	2002	2003	2004
MINERAL FUELS AND RELATED MATERIALS--Continued						
Petroleum:						
Crude	thousand 42-gallon barrels	281,198 r	284,054 r	275,355 r	270,336 r	254,202
Refinery products:[4]						
Liquefied petroleum gas	do.	12,625 r	13,025 r	12,208 r	13,236 r	12,652
Motor gasoline	do.	63,829 r	58,816 r	54,899 r	54,396 r	53,828
Aviation gasoline	do.	(5) r	(5) r	--	(5) r	--
Jet fuel	do.	12,194 r	10,709 r	10,282 r	8,944 r	9,524
Kerosene	do.	661 r	568 r	303 r	220 r	230
Distillate fuel oil	do.	77,731 r	77,415 r	70,793 r	75,668 r	76,794
Residual fuel oil	do.	9,912 r	11,363 r	11,628 r	12,551 r	15,276
Lubricants	do.	2,423 r	2,549 r	2,570 r	3,357 r	3,003
Other	do.	35,115 r	39,199 r	35,555 r	37,322 r	31,113
Total	do.	214,490 r	213,644 r	198,238 r	205,694 r	202,420

[e]Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. [p]Preliminary. [r]Revised. -- Zero.

[1]Table includes data available through September 30, 2005.

[2]Hot-rolled semimanufactures only; excludes castings and cold-rolled semimanufactures produced from imported hot-rolled semimanufactures.

[3]New information was available from Argentine sources that prompted major revisions in how lithium production is reported.

[4]Excludes asphalt and coke production, which are reported separately.

[5]Less than 1/2 unit.

TABLE 2
ARGENTINA: STRUCTURE OF THE MINERAL INDUSTRY IN 2004[1]

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum	Aluminio Argentino S.A.I.C. (Government, 52.1%, and private, 47.9%)	Puerto Madryn, Chubut Province	275
Boron	Borax Argentina S.A. (Rio Tinto Borax, 100%)	El Porvenir Mine and plant, Jujuy Province; Sije and Tincalayu Mines and plants, Campo Quijano refinery, Salta Province	615.[2]
Do.	Procesadora de Boratos S.A. (Ferro Corp., U.S.A., and JEM Resources, Canada)	Loma Blanca, Jujuy Province, and plant at Papala	36.
Do.	Ulex S.A. (private, 100%)	Pastos Grandes, Salta Province	2.[2]
Do.	Norquímica S.A.	Salta Province	5 boric acid.
Cement	Cementos Loma Negra C.I.A.S.A. (private, 100%)	Buenos Aires, Cordoba, Corrientes, Salta, Salta Juan, Mendoza, and Jujuy Provinces	6,000.
Do.	Cementos Avellaneda, S.A. (Corporación Uniland S.A. and C. Molins International S.A.)	La Caldera plant, San Luis Province and Olavarria plant in Buenos Aires Province	2,800, 220 lime.
Do.	Juan Minetti S.A. (Holcim Ltd., 100%)	Cordoba, Jujuy, and Mendoza Provinces	1,700.
Coal	Yacimientos Carbonífero Río Turbio S.A. (private, 100%)	Rio Turbio, Santa Cruz Province	210.
Copper and gold[3]	Minera Alumbrera Ltd. (Xstrata plc, 50%; Wheaton River Minerals Ltd., 37.5%; Northern Orion Resources Inc., 12.5%)	Bajo de la Alumbrera Mine, Belen Department, Catamarca Province	200 Cu, 22,000 Au.
Gold and silver kilograms	Cerro Vanguardia S.A. (AngloGold Limited, 92.5%, and Government of Santa Cruz Province, 7.5%)	Cerro Vanguardia Mine, Santa Cruz Province	100,000 Ag, 10,000 Au.
Do.	Yacimientos Mineros de Agua de Dionisio (Government, 100%)	Farallon Negro, Hualfin, and Belen, Catamarca Province	4,600 Au, 50,000 Ag.
Do.	Small mines (private, 100%)	Various in Jujuy Province	5,000 Ag.
Iron and steel	Siderar S.A.I.C. (Techint Group, 53%; Inversora Siderúrgica Argentina, S.A., 11%; Usiminas, 5%; Compahnia Vale do Rio Doce, 5%)	7 kilometers from San Nicolas de los Arroyos, Buenos Aires Province	2,500 steel, 1,100 pig iron.
Do.	Acindar Industria Argentina de Aceros S.A. (private, 100%)	Plant Nos.1 and 3, Buenos Aires Province; Plant No. 2, near Rio Parana, Santa Fe Province	1,500 steel, 1,000 DRI.
Do.	Siderca S.A.I.C. (Techint Group)	Buenos Aires Province	900 steel, 670 DRI.
Lead, silver, and zinc[4]	Cía. Minera Aguilar S.A. (owned by Cía. Minera del Sur) (private, 100%)	Estacion Tres Cruces, El Aguilar, Jujuy Province	49,800 Ag, 24 Pb.
Lead and silver refinery[4]	do.	Refineria Aguilar, Palpala Industrial Park, Jujuy Province	15 Pb, 18,000 Ag.
Lithium metric tons	Minera del Altiplano S.A. (FMC Corporation)	Salar del hombre Muerto, Salta Province	7,260 chloride, 11,350 carbonate.
Natural gas million cubic meters	Repsol-YPF	Neuquen, Santa Cruz, Tierra del Fuego, Salta, and Rio Negro Provinces	18,000.
Petroleum million barrels	do.	Chubut, Santa Cruz, Neuquen, Rio Negro, Mendoza, Salta, Tierra del Fuego, Jujuy, La Pampa, and Formosa Provinces	366.
Uranium (ore)	Empresa Nuclear Mendoza (subsidiary Nucleoélectrica Argentina S.A.)	Sierra Pintada, San Rafael, Mendoza Province	160.
Zinc refinery	Cía. Sulfacid S.A.C.I. and Cía Minera Aguilar S.A.	Near Rosario on the Parana River, Santa Fe Province	40.

[1]Abbreviations used in this table for commodities include the following: Ag, silver; Au, gold; Cu, copper; Pb, lead; DRI, direct-reduced iron.
[2]Crude minerals.
[3]Gold data reported in kilograms.
[4]Silver data reported in kilograms.